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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/058,000	01/29/2002	Lawrence Wilcock	1509-259	3110

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HEWLETT PACKARD COMPANY
P O BOX 272400, 3404 E. HARMONY ROAD
INTELLECTUAL PROPERTY ADMINISTRATION
FORT COLLINS, CO 80527-2400

EXAMINER

MICHALSKI, JUSTIN I

ART UNIT	PAPER NUMBER
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2644

DATE MAILED: 02/24/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/058,000

Applicant(s)

WILCOCK, LAWRENCE

Examiner

Justin Michalski

Art Unit

2644

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 August 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-45 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,4-7,9,12-17,19-21,23,26-30,32-34,36 and 39-45 is/are rejected.
- 7) ☒ Claim(s) 3,8,10,11,18,22,24,25,31,35,37 and 38 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 16 August 2004 has been entered.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 2, 4-7, 9, 12-17, 19-21, 23, 26-30, 32-34, 36, and 39-45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sibbald (US Patent 6,498,857).

Regarding Claim 1, An audio user-interfacing method in which items are represented in an audio field by corresponding synthesized sound sources (Fig. 5, A-D) from where sounds related to the items appear to emanate, the method comprising: associating only some of the sound sources into a collection of which they are members (Sources A-D); and upon user command (Sibbald discloses sound effects for use in PC games which are well known to function in response to user commands, Col. 3, lines

29-35), changing the collection in either direction between: an un-collapsed state in which the member sound sources are individually audibly present in the audio field (Fig. 5, sources A-D); a collapsed state in which the member sound sources are fully muted and a collection-representing sound source provides an audible presence for the collection in the audio field (point source VP; Col. 6, lines 53-55); and keeping sound sources that are un-related to said collection audibly present in the audio field independently of the collection state (i.e. echoes and reflections; Col. 4, lines 2-6).

Regarding Claim 16, Sibbald discloses an apparatus for providing an audio user interface in which items are represented in an audio field by corresponding synthesized sound sources from where sounds related to the items appear to emanate, the apparatus comprising: storage means (Fig. 4a and 4b, 3D-positioning) for storing data on the sound sources (Fig. 5, A-D), this data including audibility data for controlling the audibility of the sources associating only which those sound sources are members and for further associating with the collection the audio field, and collection data for some of the sound sources into a collection of a collection-representing sound source; rendering-position determining means (Fig. 4A and 4B, 3D-processing) for determining, for each of said sound sources, a respective associated rendering position at which the sound source is to be synthesized to sound in the audio field; collection-control means for changing, upon user command (Sibbald discloses sound effects for use in PC games which are well known to function in response to user commands, Col. 3, lines 29-35), the collection in either direction between un-collapsed (Fig. 5, A-D) and collapsed states (Fig. 5, virtual source VP) and for correspondingly setting the

collection-related sound sources such that: audibility data of the in the un-collapsed state of the collection, the member sound sources are audible at their respective rendering positions (A-D); collapsed state of the collection, the member sound sources are fully muted and the collection-representing sound source provides an audible presence for the collection the audio field; and rendering means (Fig. 4, speakers and headphones), including audio output devices, for generating an audio field in which said sound sources are synthesized at their associated rendering positions and with the audibility collection-related sound sources set by said collection-control means, the rendering means being arranged to audibly present in said audio field, independently of the current state of said collection, those sound sources that are unrelated to said collection (i.e. echoes and reflections; Col. 4, lines 2-6).

Regarding Claim 29, Sibbald discloses an apparatus for providing an audio user interface in which items are represented in an audio field by corresponding synthesized sound sources from where sounds related to the items appear to emanate, the apparatus comprising: a data store (Fig. 4a and 4b, 3D-positioning) for storing data on the sound sources (Fig. 5, A-D), this data including audibility data for controlling the audibility of the sources in the audio field, and collection data for associating only some of the sound sources into a collection of which those sound sources are members and for further associating with the collection a collection-representing sound source; rendering-position determining arrangement (Fig. 4a and 4b, 3D-pocessing) arranged to determine, for each of said sound sources, a respective associated rendering position at which the sound source is to be synthesized to sound in the audio field; a collection-

control user command (Sibbald discloses sound effects for use in PC games which are well known to function in response to user commands, Col. 3, lines 29-35), arrangement arranged to change, upon the collection in either direction between un-collapsed (Fig. 5, A-D) and collapsed (Fig. 5, virtual source VP) states and to correspondingly set the audibility data of the collection-related sound sources such that: in the un-collapsed state of the collection, the member sound sources are audible at their respective rendering positions (A-D); in the collapsed state of the collection, the member sound sources are fully muted and collection-representing sound source provides an audible presence for the collection in the audio field; and rendering subsystem (Fig. 4, speakers and headphones), including audio output devices, arranged to generate an audio field in which said sound sources are synthesized at their associated rendering positions with the audibility of the collection-related sound sources set by said collection-control arrangement, the rendering arranged arrangement being arranged to audibly present in said audio field, independently of the current state of said collection, any said sound sources that are unrelated to said collection (i.e. echoes and reflections; Col. 4, lines 2-6).

Regarding Claims 2, 17, and 30, Although Sibbald does not explicitly disclose changing state in one direction in response to user command, Sibbald discloses use in PC games which are well known to function based on user commands.

Regarding Claims 4, 19, and 32, Sibbald further discloses (Fig. 5) the collection-representing sound source (VP) remains present in the audio field when the collection is in its un-collapsed state (sources A-D).

Regarding Claims 5, 20, and 33 Sibbald further discloses the collection-representing sound source is muted when the collection is in its un-collapsed state (when collection is un-collapsed, i.e. sources A-D, VP is muted; Col. 6, lines 53-59).

Regarding Claim 6, Sibbald further discloses the change between collection states, least one direction, accompanied by a corresponding sound suggestive of moving to the end state of the current change (Fig. 5, Limit approaching point source VP).

Regarding Claims 7, 21, and 34 Sibbald further discloses the change between collection states, one direction (i.e. un-collapsed to collapsed), accompanied by moving the member sound sources through the audio field between their normal locations and the location of the collection-representing sound source, the direction of this least movement being dependent on the end state of the current change (Fig. 5, Col. 6, lines 51-59).

Regarding Claims 9, 23, and 36 Sibbald further discloses wherein when the collection is representing sound source outputs at least extracts of the sounds associated with the collection member sound sources when un-its collapsed state, the collection-collapsed (Sibbald discloses the point source simulating the truck, i.e. sources A-D, Col. 6, lines 51-59).

Regarding Claim 12, 26, and 39 Sibbald further discloses wherein the collection is associated with a respective audio-field reference (Fig. 5, audio listener) relative to which the member sound sources of the collection are positioned, other sound sources in the audio field being positioned relative to one or more further audio-field references,

the audio-field references being independently movable relative to a presentation reference determined by a mounting configuration of audio output devices used to synthesize said sound sources (Fig. 1, Sibbald discloses setting azimuth and elevation in a head related transfer function), with movement of a said audio-field reference relative to the presentation reference resulting in corresponding movement of the associated sound sources (Fig. 5, listener location).

Regarding Claims 13, 27, and 40 Sibbald further discloses the audio field reference associated with the collection is world-stabilized and the member sound sources represent augmented reality services, each member sound source being positioned relative to the audio field reference of the collection such that for a user located in a notional reference position, the sound source lies the same direction as a corresponding real-world location associated with the augmented reality service represented by the sound source (Sibbald discloses azimuth and elevation with a head related transfer function, i.e. world stabilized).

Regarding Claim 14, Sibbald further discloses the audio field is rendered by apparatus (Fig. 4a and 4b) including audio output devices according to sound-source data indicative the rendering position and audibility of the each sound source in the audio field (Fig. 4a and 4b disclose headphones and speakers), the muting and un-muting of said member sound sources to collapse and un-collapse the collection being effected by changing the sound-source data for these sound sources to appropriately set the audibility of the sources (Fig. 4, 3D-positioning).

Regarding Claim 15, Sibbald further discloses upon un-collapsing of the collection, at least some of the other sound sources in the audio field have their positions in the audio field adjusted (Fig. 5, moving from virtual point in direction of points A-D).

Regarding Claim 42, Sibbald discloses an apparatus for driving an audio output device via an audio user interface in which items are represented in an audio field by corresponding synthesized sound sources from which sounds related to the items appear to emanate, the apparatus comprising: a data store for storing data on the sound sources (Fig. 4a and 4b, 3D-positioning), the stored data including audibility data controlling the audibility of the sources in the audio field (Fig. 5, sources A-D), and collection data for associating only of which those sound sources are members and for further the sources the audio field (sources A-D), and collection data for associating only some of the sound sources into a collection associating with the collection a collection-representing sound source (Fig. 5, vehicle associated with sources A-D); a processor arrangement for: (a) determining for each of said sound sources a respective associated rendering position at which the sound source is to be synthesized to sound in the audio field (Fig. 4, 3D-processing); (b) changing, upon user command (Sibbald discloses sound effects for use in PC games which are well known to function in response to user commands, Col. 3, lines 29-35), the collection in either direction between un-collapsed (sources A-D) and collapsed (Fig. 5, virtual point VP) states and correspondingly set the audibility data of the collection-related sound sources such that: in the un-collapsed state of the collection, the member sound sources are audible at

their respective rendering positions (A-D); in the collapsed state of the collection, the member sound sources are fully muted and the collection-representing sound source provides an audible presence for the collection the audio field (VP); and (c) generating signals for causing an audio field in which said sound sources are synthesized at their associated rendering positions with the audibility of the changed collection-related sound sources (Fig. 4, headphone and speakers), the signals being such that said audio field is audibly presented independently of the current state of said collection, any said sound sources that are unrelated to said collection (i.e. echoes and reflections; Col. 4, lines 2-6).

Regarding Claim 43, Sibbald further discloses headphone and speakers in Fig. 4.

Regarding Claim 44, Sibbald discloses an apparatus (Fig. 4a and 4b) for an driving audio output device via an audio user interface in which items are represented in an audio field by corresponding synthesized sound sources from which sounds related to the items appear to emanate, the apparatus comprising: a data store for storing data on sound sources (Fig. 4a and 4b, 3D-positioning), the stored data including audibility data for controlling the audibility of the sources in the audio field, and collection data for associating only some of the sound sources into a collection which those sound sources are members (Fig. 5, sources A-D) and for further associating with the collection a collection-representing sound source; a processor arrangement for: changing, upon use command (Sibbald discloses sound effects for use in PC games which are well known to function in response to user commands, Col. 3, lines 29-35), the collection in either direction between: an un-collapsed state (sources A-D) in which the member sound

sources are individually audibly present in the audio field; a collapsed state (virtual source VP) in which the member sound sources are fully muted and a collection-representing sound source provides an audible presence for the collection in the audio field; and for causing sound sources that are un-related to said collection to remain audibly present in the audio field independently of the collection state (i.e. echoes and reflections; Col. 4, lines 2-6).

Regarding Claim 45, Sibbald further discloses headphone and speakers in Fig. 4.

Regarding Claims 28 and 41, Figure 4 disclose the use of speakers and headphones which are inherently head and world stabilized respectively.

Allowable Subject Matter

3. Claims 3, 8, 10, 11, 18, 22, 24, 25, 31, 35, 37, and 38 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Justin Michalski whose telephone number is (703)305-5598. The examiner can normally be reached on M-F 7-3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sinh Tran can be reached on (703)305-4040. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



SINH TRAN
SUPERVISORY PATENT EXAMINER

JIM